

**WHAT IS CLAIMED IS:**

1. An optical film comprising a layer containing preformed porous polymer particles with a specific surface area of  $10 \text{ m}^2/\text{g}$  or greater and a median diameter from 1-20  $\mu\text{m}$  in a radiation cured binder.
2. The optical film of claim 1 wherein the radiation cured binder comprises polyfunctional acrylic compounds derived from polyhydric alcohols.
3. The optical film of claim 2 wherein the radiation cured binder comprises a repeating group selected from ethoxylated trimethylolpropane tri(meth)acrylate, tripropylene glycol di(meth)acrylate, trimethylolpropane tri(meth)acrylate, diethylene glycol di(meth)acrylate, pentaerythritol tetra(meth)acrylate, pentaerythritol tri(meth)acrylate, dipentaerythritol hexa(meth)acrylate, 1,6-hexanediol di(meth)acrylate, and neopentyl glycol di(meth)acrylate.
4. The optical film of claim 2 wherein the radiation cured binder comprises a repeating group selected from pentaerythritol tetra(meth)acrylate and pentaerythritol tri(meth)acrylate.
5. The optical film of claim 1 wherein the radiation cured binder comprises acrylate and methacrylate oligomers derived from low-molecular weight polyester resin, polyether resin, acrylic resin, epoxy resin, and polyurethane resin.
6. The optical film of claim 1 wherein the radiation cured binder comprises a urethane acrylate compound.

7. The optical film of claim 1 wherein the radiation cured binder comprises an aliphatic urethane acrylate derived from isophorone diisocyanate.
8. The optical film of claim 1 wherein the radiation cured binder comprises a polyurethane acrylate derived from an aliphatic polyester polyol.
9. The optical film of claim 1 wherein the specific surface area is 50 m<sup>2</sup>/g or greater.
10. The optical film of claim 1 wherein the particles comprise acrylic or styrenic repeating units.
11. The optical film of claim 1 wherein said particles are present in at least 2% by volume of the layer.
12. The optical film of claim 1 wherein said particles are present in an amount of less than 50% by volume of the layer.
13. The optical film of claim 1 additionally containing a silicone acrylate lubricant.
14. The optical film of claim 13 wherein the silicone acrylate lubricant is a methacryloxy-functional silicone polyether copolymer.
15. The optical film of claim 1 wherein said film has a pencil hardness of greater than 2H.
16. The optical film of claim 1 wherein said film has a pencil hardness of between 2H and 8H.

17. The optical film of claim 1 wherein said film is disposed on a transparent polymeric support.

18. The optical film of claim 17 wherein said support is selected from the group consisting of triacetyl cellulose, polyethylene terephthalate, diacetyl cellulose, acetate butyrate cellulose, acetate propionate cellulose, polyether sulfone, polyacrylic based resins, polyurethane based resin, polyester, polycarbonate, aromatic polyamide, polyolefins, polymers derived from vinyl chloride, polyvinyl alcohol, polysulfone, polyether, polynorbornene, polymethylpentene, polyether ketone, and (meth)acrylonitrile.

19. The optical film of claim 17 wherein said support comprises triacetyl cellulose.

20. The optical film of claim 1 wherein the transmission haze of the film is less than 30 percent.

21. The optical film of claim 1 wherein the transmission haze of the film is less than 10 percent.

22. The optical film of claim 1 wherein the 60° gloss of the layer is less than 130 percent.

23. The optical film of claim 1 wherein the total light transmission of the film is greater than 90 percent.

24. An optical film comprising a layer containing a radiation cured binder derived from a mixture of (meth)acrylate derivatives of pentaerythritol functionalized aliphatic urethanes.

25. An optical film of claim 23 wherein the mixture comprises pentaerythritol tetra(meth)acrylate and pentaerythritol tri(meth)acrylate functionalized aliphatic urethanes.

26. The optical film of claim 23 wherein the radiation cured binder is derived from isophorone diisocyanate.

27. A coating dispersion comprising a radiation curable urethane acrylate oligomer, porous polymer particles with a specific surface area of  $10 \text{ m}^2/\text{g}$  or greater and a median diameter of 1-20  $\mu\text{m}$ , a radiation sensitive curing agent, and an organic solvent.

28. The coating dispersion of claim 26 wherein said organic solvent comprises an ester solvent or an aromatic hydrocarbon.

29. The coating dispersion of claim 26 wherein said radiation sensitive curing agent comprises a UV sensitive curing initiator.

30. A method of forming an optical film comprising a flexible transparent polymeric support with an application of a coating of radiation curable binder with polyfunctional acrylic compounds, porous polymer particles in an organic solvent, and radiation curing the coating to form a layer.

31. The method of claim 29 wherein the coating additionally contains a silicone acrylate.

32. The method of claim 29 wherein the radiation curable binder comprises a repeating group selected from ethoxylated trimethylolpropane tri(meth)acrylate, tripropylene glycol di(meth)acrylate, trimethylolpropane tri(meth)acrylate, diethylene glycol di(meth)acrylate, pentaerythritol tetra(meth)acrylate, pentaerythritol tri(meth)acrylate, dipentaerythritol

hexa(meth)acrylate, 1,6-hexanediol di(meth)acrylate, and neopentyl glycol di(meth)acrylate.

33. The method of claim 29 wherein the radiation curable binder comprises a repeating group selected from pentaerythritol tetra(meth)acrylate and pentaerythritol tri(meth)acrylate.

34. The method of claim 29 wherein the radiation curable binder comprises acrylate and methacrylate oligomers derived from low-molecular weight polyester resin, polyether resin, acrylic resin, epoxy resin, polyurethane resin.

35. The method of claim 29 wherein the radiation curable binder comprises a urethane acrylate containing compound.

36. The method of claim 29 wherein the radiation curable binder comprises an aliphatic urethane acrylate derived from isophorone diisocyanate.

37. The method of claim 29 wherein the radiation curable binder comprises a polyurethane acrylate derived from an aliphatic polyester polyol.

38. The method of claim 29 wherein the particles have a specific surface area of  $50 \text{ m}^2/\text{g}$  or greater.

39. The method of claim 29 wherein the particles have an average size of between 1 and  $20 \text{ }\mu\text{m}$ .

40. The method of claim 29 wherein said particles are present in an amount of at least 2% by dry weight of the layer.

41. The method of claim 29 wherein said particles are present in an amount of less than 50 percent by dry weight of the layer.

42. An LCD display comprising the optical film of claim 1.

43. An LCD display comprising the optical film of claim 23.

44. A touch screen display comprising the optical film of claim 1.

45. A touch screen display comprising the optical film of claim 23.